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10/540,474	06/23/2005	Manabu Matsui	0445-0354PUS1	2979
2292 7590 07/10/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
STEELE, JENNIFER A				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
07/10/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/540,474

Applicant(s)

MATSUI ET AL.

Examiner

JENNIFER STEELE

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 2/29/2008

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation that the "heat shrinkage values being minus at a temperature higher than the melting point or softening point of the second resin". As stated, the limitation of heat shrinkage as a minus value is indefinite as shrinkage would mean loss of length of the filament and minus value would also mean a loss of length of the filament. As read in the specification, the minus value of heat shrinkage can be interpreted to mean the fiber expands or increases in length.
2. Claim 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation that the conjugate fiber is a sheath and core fiber, however claim 1 recites the limitation that the second resin component being present on at least part of the surface of the fiber. One of ordinary skill in the art would consider a sheath and core fiber where there is a core surrounded by a sheath. If the core is partially surrounded by the sheath, which would not be obvious to one of ordinary skill in the art and the limitation of claim 4 is not consistent with the limitation of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 1, 4-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizawa et al in view of Chisso Corp JP 50095519 in further view of Stibal, Fibers 3, Ullmann's Encyclopedia of Industrial Chemistry, online posting 9/15/2001. Ishizawa et al. teaches a melt-adhesive composite fiber and non-woven fabrics from the composite fibers wherein the fibers are fused at the intersections of the fibers. Ishizawa teaches fibers having polypropylene as the core component and polyethylene as the sheath component. Ishizawa teaches the polypropylene is a crystalline polypropylene that has a melting point higher than the polyethylene by 20°C or more. Ishizawa teaches the bicomponent fibers are of a sheath core or side-by-side type with the second component, polyethylene being continuously present on at least a part of the fiber surface in the lengthwise direction of the fiber. Ishizawa teaches a process of high

Art Unit: 1794

speed melt spinning, stretching the filaments at a temperature of 90-130C wherein the stretch ratio is 0.65 to 0.85 of the maximum stretching ratio, cooling the filaments and annealing the filaments (col. 2, lines 1-10). Ishizawa teaches a heat treatment. Ishizawa also teaches the filaments develop crimp by utilizing the difference in the elastic shrinkage of the two components. Ishizawa's teaching of a low stretching ratio of 0.6 to 0.85 is equated with the current applications limitation of low draw ratio (col 2, lines 1-5). Ishizawa teaches a bulky fabric with strength of 2500 g/5 cm based on the Ishizawa strength test. Ishizawa teaches a fabric with a soft hand feeling but teaches a qualitative measure and not a test measurement as the current application. Ishizawa teaches low fabric shrinkage under 10%. Ishizawa also teaches that the property of fiber shrinkage and states that the shrinkage of the fibers caused by the developments of crimps at the time of the heat treatment can be avoided.

Chisso teaches a heat shrinkage resistant conjugate fiber prepared by melt spinning crystalline polypropylene and polyethylene side by side wherein the shrinkage of the fiber is 3% at 130 degrees. Chisso teaches a process of melt spinning that can be optimized to improve or reduce the heat shrinkage of a polyethylene and polypropylene fiber. As such, Chisso presents a finding that one of ordinary skill in the art could have optimized the process in order to improve the shrinkage of the filament to obtain the desired product.

As claimed, the specific shrinkage is measured at a temperature that is stated to be higher than the melting point of the second resin component by 10°C. The teachings of Ishizawa stating that the fiber shrinkage can be reduced and Chisso stating that the

Art Unit: 1794

fiber shrinkage can be reduced present findings that one could have optimized the processes to improve the fiber properties. As Ishizawa differs and does not measure the fiber shrinkage and Chisso measures the fiber shrinkage at 130° C, one can presume that the claimed property of heat shrinkage would be inherent in the conjugate fibers of Ishizawa and Chisso. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02

Ishizawa differs from the current application and does not teach the orientation index of the polymers in the conjugate filament. Stibal teaches the relationship between the draw ratio, crystallinity or orientation and melt spinning. Stibal teaches high-speed spinning has become an important processing variant of melt spinning because only a low postdraw is then required, which is usually integrated into one of the other processing steps. High-speed spinning also reduces shrinkage due to formation of oriented crystallites.

Ishizawa and Chisso teach conjugate fibers with low fiber heat shrinkage made from processes of high speed melt spinning followed by a heat treatment. Ishizawa teaches a low stretch ratio that is equated with the current limitation of a low draw ratio. Ishizawa and Chisso differ and do not teach the properties of orientation index nor a minus heat shrinkage. Stibal teaches that the process parameters that can optimize

Art Unit: 1794

orientation or crystallinity in a fiber and that high speed spinning can reduce draw required which reduced fiber shrinkage. Ishizawa, Chisso and Stibal present findings that one of ordinary skill in the art could have optimized the process parameters and the results of the changes in process parameters would be predictable and could reduce the heat shrinkage of a conjugate filament.

As to claim 4, Ishizawa teaches a sheath-core configuration.

As to claim 5, Ishizawa teaches a first resin of polypropylene and a second resin of high density polyethylene (Table 1, col. 7).

As to claim 6, Ishizawa teaches fusing the fibers as Ishizawa teaches a fabric of produced of a melt-adhesive composite fiber wherein the fibers are fused at intersectional points of the fibers (ABST).

As to claim 7, Ishizawa teaches a bulky fabric with strength of 2500 g/5 cm based on the Ishizawa strength test. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02

As to claim 8, Ishizawa teaches a carding step can be used (col. 1, lines 40 and col. 3, lines 30) and teaches fusing the fibers with a heated air dryer (col. 5, lines 8).

As to claim 9, is rejected by Ishizawa in view of Chisso and Stibal is presented in paragraphs above as Ishizawa teaches the limitation of claims 7 or 8 that claim 9 is dependent from.

Response to Arguments

4. Applicant's arguments, with respect to rejection to Furukawa have been fully considered and are persuasive. The 35 USC 120(b)/103 to Furukawa of claims 1 and 4-9 has been withdrawn.
5. Applicant's arguments, with respect to rejection to Furukawa have been fully considered and are persuasive. The 35 USC 103(a) to Furukawa in view of Ishizawa of claims 1 and 4-9 has been withdrawn.
6. Applicant's arguments, with respect to rejection to Furukawa have been fully considered and are persuasive. The 35 USC 103(a) to Furukawa in view of Kemp of claims 1 and 4-9 has been withdrawn.
7. Applicant's arguments with respect to claim 1, 4-9 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments the Applicant is claiming fiber shrinkage and not fabric shrinkage were persuasive and new grounds of rejection is presented in this Office Action.
8. Applicant's arguments that Ishizawa does not teach a low draw ratio are not persuasive. As Ishizawa does not teach a draw ratio but instead teaches stretching such that the ratio of stretching is 0.65 to 0.85 of a stretching force that is force when the fiber fluffs. Applicant discloses in the specification that the draw ratio is less than 2

Art Unit: 1794

and does not exclude elongation or stretching during the heat or crimp treatment (specification page 6, lines 8-12). As Ishizawa teaches stretching and not drawing and Applicant does not exclude stretching, Ishizawa's process is substantially the same as that disclosed by Applicant. Further, as stated in the 35 USC 103(a) rejection of this Office Action, Ishizawa in combination with Chisso and Stibal teach that a fiber with low heat shrinkage is known in the art and that orientation index and heat shrinkage can be affected by the process parameters of high speed melt spinning and low draw ratio. It should be noted that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or an obvious variant from a product of the prior art, the claim is unpatentable even though a different process made the prior product. In re Thorpe, 227 USPQ 964,966 (Fed. Cir. 1985). The burden has been shifted to the Applicant to show unobvious differences between the claimed product and the prior art product. In re Marosi, 218 USPQ 289,292 (Fed. Cir. 1983).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

Art Unit: 1794

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 1794

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

6/20/2008